IOWA DEPARTMENT OF PUBLIC HEALTH
Bureau of Radiological Health
Lucas State Office Building, Des Moines, IA 50319

October, 1999

INFORMATION NOTICE 99-X06: Possible radiation burns to patients during fluoroscopy procedures especially HCL

ADDRESSEES: All facilities with fluoroscopy units

PURPOSE:

The Iowa Department of Public Health (IDPH) is issuing this information notice to alert addressees to recent incidents of radiation burns to patients during heart catherization laboratory (HCL) fluoroscopy procedures. It is expected that recipients will review this information for applicability to their procedures and consider actions, as appropriate, to avoid similar problems. No specific written response to this notice is required unless you are reporting events as specified in Issue 1 below.

DESCRIPTION OF CIRCUMSTANCES:

During an investigation of an Iowa hospital, it was discovered that during 1995 and 1996, three patients who had heart catherization fluoroscopy experienced burns in the general area of their backs. The kVp and mA were not available for any of these cases. One patient had a total fluoro exposure time in excess of 60 minutes.

ISSUE 1:
The IDPH files contained no notification of these two incidents as required by 641-40.96 of the Iowa Radiation Machines and Radioactive Materials Rules. 641-40.96(1)"a"(3) requires notification within 24 hours of each event that may have caused an individual to receive a shallow dose equivalent to the skin of 250 rad or more. The notification should include the information in 641-40.96(4) .

40.96(4) requires the following information to be reported:
1. The caller's name and call-back telephone number.
2. A description of the event, including date and time.
3. The exact location of the event.
4. The isotopes, quanitites, and chemical and physical form of the licensed material involved, (if any).
5. Any personnel radiation exposure data available.

A follow-up report is due within 30 days of the initial report and should include, in addition to the above:
1. Probable cause
2. Corrective action taken or planned and the result of any evaluations or assessments.
3. The extent of the exposure of individuals to radiation without identification of individuals by name.

ISSUE 2:
641-40.10(3) requires the facility, at intervals not to exceed 12 months, to review the radiation protection program content and implementation. The facility in question had no review for the x-ray areas of their programs. The result of these reviews should be a part of the radiation safety committee meeting minutes.

ISSUE 3:
It is not a common occurrence for a person to receive burns by radiation during a fluoroscopy evaluation. 641-40.1(3) states that every reasonable effort should be made to maintain radiation exposures as low as is reasonable achievable (ALARA) taking into account the state of technology and the benefits to the patient. Since there was no audit or follow-up as to the reasons for the radiation burns, the facility could not justify the apparent overexposure to the patients.

CONCLUSIONS:
This information notice is to make each facility and their staff aware of the possibility of patient burns during fluoroscopy, the need to follow these patients, and the requirements to report to the IDPH accordingly.

1. All staff should be aware of the reporting requirements for individuals receiving 250 rads shallow dose equivalent to the skin. Management should initiate a recording system to estimate and/or calculate doses to the patient. This system should include kVp, mA, and total fluoro "on time".
2. Fluoroscopy physicians and staff should be aware of radiation safety procedures and the need to follow ALARA. Additional training or periodic continuing education may be necessary.
3. The radiation safety committee should review the fluoroscopy procedures and film badge reports for high exposures and look for ways to cut fluoroscopy times to reduce patient and staff exposure (ALARA). The results of the reviews should be included in the radiation safety committee minutes.
4. The facility should initiate some type of tracking to follow patients who receive high exposure (example: any patient who might have received 250 rads or more) by referring them to a dermatologist or physician specialized in treating radiation burns for an evaluation.

Reducing radiation exposure during fluoroscopy procedures takes the cooperation of all staff and management. We, as well as the public, appreciate your cooperation in achieving this goal.

If you have any questions regarding this information notice, please contact Donald Flater, 515/281-3478, or Paul Koehn, 515/281-3806.

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